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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,841	10/08/2004	G. R. Mohan Rao	A4-1845	5840
27127	7590	11/30/2006	EXAMINER	
HARTMAN & HARTMAN, P.C. 552 EAST 700 NORTH VALPARAISO, IN 46383			LE. THONG QUOC	
			ART UNIT	PAPER NUMBER
			2827	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding:

Office Action Summary

Application No.

10/711,841

Applicant(s)

RAO ET AL.

Examiner

Thong Q. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 11-20, 29 and 30 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 7, 8 and 21 is/are rejected.
- 7) ☒ Claim(s) 2-3, 5, 9-10, 22-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. Amendment filed on 10/27/2006 has been entered.
2. Claims 1-30 are presented for examination.

Response to Arguments

3. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,4,7-8, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ooishi (Pub. U.S. Patent No. 2002/0075746).

Regarding claims 1, 21, Ooishi discloses a semiconductor memory device (Figure 6) comprising a bank with multiple pages ([0436, banks B#A..), the device comprising means ([0316]) for keeping multiple pages open on the bank, wherein the keeping means ([0316], latch 270) comprises latches coupled to a sense amplifier ([0316], 260) associated with the bank, the latches operating in the storage of data read-from and written-to the sense amplifier (Figure 1, DR).

Regarding claim 4, Ooishi discloses wherein the bank comprises memory cells arranged in arrays of rows and columns (Figure 54), and the keeping means comprises a counter (Figure 94, 764) in a row path operatively connected to the rows of the bank.

Regarding claim 7-8, Ooishi disclose wherein bank comprises memory cells arranged in arrays of rows and columns, the memory cells comprise storage cells, and the storage cells comprise at least one transistor and at least one capacitor (Figure 98, MC), and wherein the device has a dynamic random access memory architecture ([0002]).

Allowable Subject Matter

6. Claims 2-3, 5, 9-10, 22-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2-3,5,9-10 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Ooishi (Pub. U.S. Patent No. 2002/0075746), and others, does not teach the claimed invention having wherein the keeping means is operative to post a precharge command immediately after a command for a first access of one of the multiple pages in anticipation of a subsequent access of the page, the keeping means keeping the page open for a number of clock cycles and the precharge command causing a precharge operation to be executed after completion of the number of clock cycles.

7. Claims 6, 11-20, 29-30 is allowed.

Claims 6, 11-20, 29-30 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or

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suggest the claimed limitations. Ooishi (Pub. U.S. Patent No. 2002/0075746), and others, does not teach the claimed invention having a sense amplifier and a SRAM register coupled to the sense amplifier to provide low column access latency as claim 6 disclosed, and a semiconductor memory controller operable to issue commands to a memory module comprising multiple memory integrated circuits with memory cells arranged in arrays of rows and columns defining multiple pages, the memory controller comprising means for performing a posted precharge operation immediately after a command for a first access of a page in anticipation of a subsequent access of the page, the performing means comprising latches coupled to sense amplifiers associated with the memory integrated circuits, the latches operating in the storage of data read-from and written-to the sense amplifiers as claims 11-20, 29-30 disclosed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Le whose telephone number is 571-272-1783. The examiner can normally be reached on 8:00am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarabian Amir can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Thong Q. Le
Primary Examiner
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11/24/2006